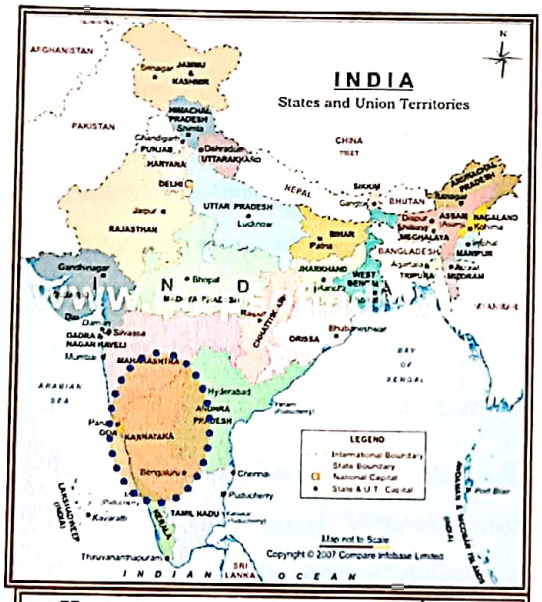
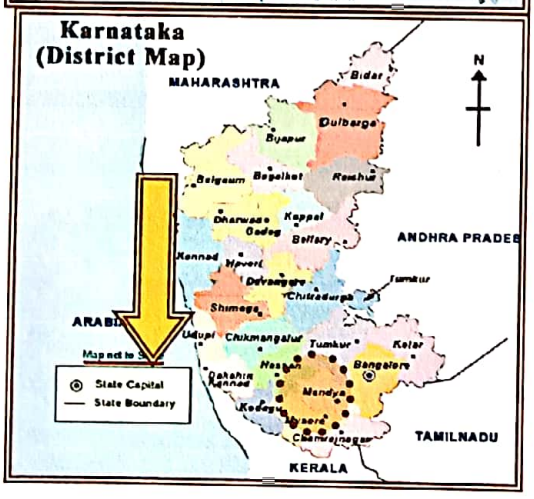
**Name of Work : Improvements to roads,drains and other development works at yelahanka old town,Maruthinagara,sapthagiri layout Gandhinagara KHB Colony,Nehru nagara,Shivanahalli,PDMS APTS Premies and surrounding areas in ward No 01 of Yelahanka Division under Amruth Nagarothana Grants.(PACKAGE NO 01)**

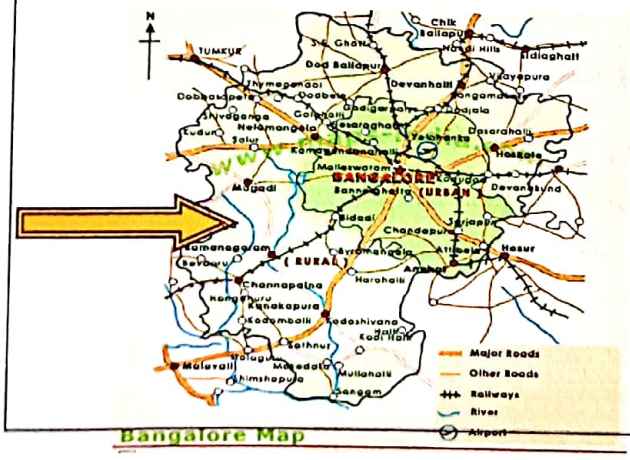
# Chapter -1
# INTRODUCTION



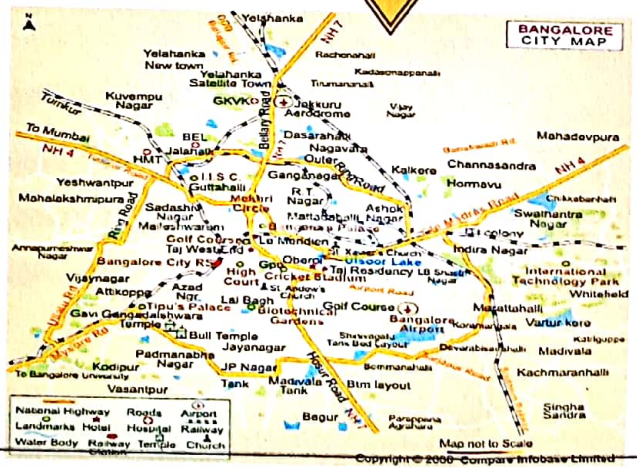




Bangalore, the capital of Karnataka State is one of India's fast developing city. Today, it is India's 5th largest city, the momentum of its industrial and commercial growth is unequalled in the country. The Average annual growth rate is 3.25 %. The city has been attractive due to its environmental quality notably the green cover often termed as the garden city of India and the salubrious climate all around the year.

Today, the state of Karnataka is the eighth largest in the country both in terms of its population and its area. Its capital city, Bangalore, is now classified as a mega city and has a population of over five million inhabitants. The last five decades have been a period of rapid growth for Bangalore with a proliferation of multinational companies choosing to locate their operations in the city and its environs in industrial products, consum durables and more recently information techno y.



Bangalore Map

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Bengaluru is a major city in south India with a growing population. The vehicle population in all cities in India started growing rapidly since later part of 1980s. Bangalore is no exception. It has always had a reputation of having more two wheeler users. The liberalization policy of the country made availability of not only vehicles but also loans for buying vehicles. With the rapid growth of IT sector in Bangalore, the affordability of larger segment of employees increased for ownership of vehicles, more specially two wheelers. Coupled with inadequacy of comfortable and convenient public transport gave an impetus to more and more commuters shifting to cars and two wheelers for their commuting in Bangalore. The number of registered motor vehicles has crossed 2.5 million and is growing at a rate of over 12% per annum. The two wheelers, which constitute about 72% of the total registered vehicles, are growing at a rate of about 13% per annum. Lately, cars have been growing even faster than two wheelers. Vehicle ownership has grown from 58 to 365 per 1000 population. The trend is likely to continue. This will result in higher use of personalized modes of transport particularly cars unless extensive and convenient public transport system is provided.

The combined effect of all these on the road network of Bangalore is delay and congestion beyond tolerable limits. Vehicular conflicts at the intersections are being eliminated by traffic signals but at the expense of delays and long queues. The peak hour has spread over a longer period of time, since there are no perceptible capacity augmentation / conflict reduction measures.

In view of the above facts, road commuters are experiencing inconvenience and increased road user cost due to increase in the following factors.

- Intra city commuting time.
- Traffic congestions.
- Number of junctions & intersections.
- Junction delays.
- And increased rate of accidents, health hazards etc.

Hence, there is an urgent necessity to decongest these roads and intersections

As a comprehensive development programme for improvement of road network, the Bruhath Bangalore Mahanagara Palike (BBMP) has planned Improvements to Junction, widening / Improvements of roads, strengthening of pavement base and sub – base,



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improvement to pedestrian facilities, improvements to Drainage Facility, etc. This response is the answer to the severe strain on the urban infrastructure, which is inevitable due to the very rapid rate of growth in traffic. Travel demands of passengers have increased many folds in the last two decades. Unfortunately growth in the infrastructure is not commensurate with the growing demands of traffic. There is an exigent need to effectively manage the traffic and transportation systems to optimize the solutions with short term and long – term measures.

The objective of this project is to provide Developmental Works in Yelahanka, Bengaluru.

## Project Background

Yelahanka is now a suburb of Bangalore in the state of Karnataka and one of the zones of BBMP. It is the oldest part of present Municipal Bengaluru (Bangalore) city and is in the north of the city. It is Nadaprabhu Kempegowda I, of the Yelahanka Prabhu clans, who laid the foundation of present day Bengaluru through the creation of a "mud fort town" in 1537 CE.

## The Yelahanka Town

The city of Yelahanka had been in existence prior to the 12th century. The region was called 'Ilaipakka Naadu' during the rule of Cholas. A stone tablet of 1267 A.D found in Doddaballapur mentions **Dechi Devarasa**, ruling the region with Yelahanka as his capital under the aegis of Hoysala monarch 'Narasimha (Third)'.

Later, during Hoysala rein, the city came to be known as 'Elavanka' and gradually shifted to 'Yelahanka'.[3] It was also known as Elavank.[4]

Of the numerous Rulers of different dynasties who ruled with Yelahanka as their Capital, the Kempe Gowdas are the most acclaimed. *Hiriya Kempe Gowda* (Kempe Gowda the First) built a fort in the adjoining village of Bengaluru and developed it as his new capital, probably due to its strategic location and slightly cooler climate being at a higher altitude. It was his son, *Immadi Kempe Gowda*, who had the famous watchtowers built in the four directions of the new city.



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Some Temples in Yelahanka—like the Venugopala Swamy Temple—have remained as a testimony to its rich past. Although a Fort's remnant could not be traced, a street nearby the Venugopala Swamy Temple is still known as 'Kote Beedi' or 'Fort Street

Yelahanka lies to the north of Bengaluru. It was a Municipal council and Taluk (lies below the District level in administrative setup) headquarters prior to the formation of BBMP (a metro corporation annexing the original Bangalore area and its suburbs) and now forms a part of Greater Bengaluru. A well-planned township was developed during the early 1980s to the north of the city by the Karnataka Housing Board and is identified by several names like 'Yelahanka Upanagara', 'Yelahanka Satellite Town', 'Yelahanka New Town' or simply 'Housing Board'.

National Highway NH 44 passes through Yelahanka. The newly constructed Navayuga Devanahalli KIAL Expressway (Part of NH 44) also passes through the suburb and the northeastern fringes of Yelahanka, acting as a bypass road to avoid the Yelahanka suburb. State Highway 9 (Bangalore - Hindupur) passing in the south of Yelahanka bisects the suburb into Old Town and New Town. Yelahanka's business areas are Hospital Main Road and BB road in Yelahanka and New Town are 16th 'B' Cross and Mother Dairy Cross and Yelahanka New Town, 4th phase.

Yelahanka has several lakes surrounding it, adjoining: Old Yelahanka, Puttenahalli, Attur, Ananthapura, and Allalasandra. The lake at Puttenahalli (3 km up the SH 9) has been declared a bird sanctuary. Most of these are either dry or are in bad condition due to emptying of untreated sewerage effluents into them.

Yelahanka is on the verge of being the prime real estate hub in North Bengaluru owing to its vast undeveloped areas and easy access to the Kempegowda International Airport. Yelahanka has seen remarkable developments since its inception.

Most major retail brands have a presence in Yelahanka. Major ones include Yelahanka Central, RMZ Galleria Mall, and Dmart in Yelahanka New Town



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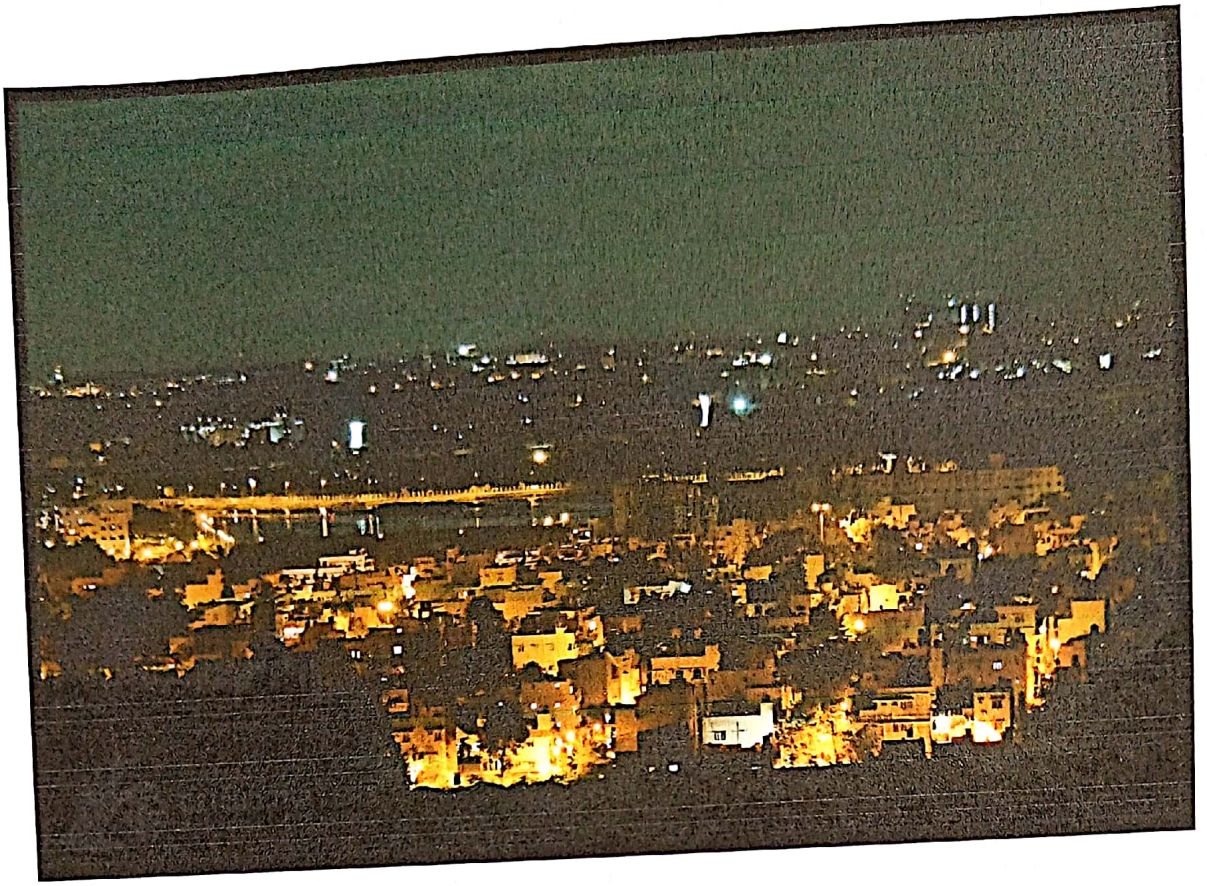

## Geography

Yelahanka is at a height of about 915 metres (3000 feet) above mean sea level. Due to its higher altitude from mean sea level, it is lush green and has pleasant weather year-round.

- The summer season lasts from March to mid-May, with temperatures ranging between 23–38 degrees Celsius
- At the end of May, the monsoon season starts and lasts until the end of October. There are about 45 inches of rain annually. Yelahanka is served by both southwest as well as northeast monsoon.
- Winters are mild and lasts from November to February, with temperatures ranging between 13-28 degrees Celsius

## Demographics

As of 2001 India census, Yelahanka had a population of 93,263. Males constituted 54% of the population and females 46%. The literacy rate was 75%, higher than the national average of



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59.5%: male literacy was 80%, and female literacy was 68%. Eleven percent of the population were under 6 years of age.

As per recent estimates, the population of Yelahanka has risen to about 300,000 in 2011

## Connectivity

Yelahanka has excellent connectivity be it road, rail, and air. The road network to Yelahanka is one of the best in entire Bangalore. Yelahanka railway station is one of the oldest stations setup in Bangalore area and has railway lines connecting KR Puram and Byapanahalli in the east and Yeshwanthpur in the northwest. If these tracks are improved and daily city passenger trains introduce, a big part of traffic congestion will be eased as more people will use trains. Since the tracks are already existing, it is better to use the existing infrastructure rather than investing in new activities like Metro. Kempegowda International Airport is located off Yelahanka.

## Roadways

Yelahanka is connected with downtown Bangalore through a network of roads and a six-lane dual carriageway highway. The same highway connects Yelahanka with Kempegowda International Airport. BMTC (Bangalore Metropolitan Transport Corporation), KSRTC serves Yelahanka with its network of buses. There are regular BMTC Volvo A/C Bus services and other buses to Bangalore from Yelahanka.

National Highway 44 (North–South Corridor) also passes through Yelahanka.

Karnataka State Highway 9 starts at Yelahanka main road near Yelahanka traffic police station and ends near the Andhra Pradesh border near Vidurashwatha, where it continues as AP SH 472 until Hindupuram.

Yelahanka is also served by a host of private taxi companies operating in the Greater Bangalore area and also the Auto Rickshaw services within the Bangalore Metropolitan Area.



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- CRPF (Central Reserve Police Force) has a training school for their officers and troops at Yelahanka, with residential campuses for the troops. CRPF campus is located in a lush green environment on Doddaballapur Road.
- Karnataka State Reserve Police has its Training facility at Yelahanka. The academy is located in the northern part of the suburb, near the Air Force station.

## Contents of the Report

The Methodology, as detailed in the Project Proposal, has been followed for carrying out the necessary Investigations and Preparation of Detailed Estimate and Report.

In this regard KRIDL has assigned the Preparation of Detailed Estimate to **M/s Civil Infra Tech Consultancy.**

This Report includes the following.

- ❖ Chapter 2: Engineering Surveys and Investigation
- ❖ Chapter 3: Design Standards
- ❖ Chapter 4: Analysis, Designs and Improvements
- ❖ Chapter 5: Cost Estimates
- ❖ Chapter 6: Conclusion
- ❖ Chapter 7: Photographs
- ❖ Chapter 8: Drawings



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# CHAPTER -2
# ENGINEERING SURVEYS AND INVESTIGATIONS

## 2.1 General

Various surveys and investigations that are essential inputs for detailed engineering design are detailed in this chapter. All the relevant maps / data / details available with the concerned departments have been collected, compiled and reviewed. Particular attention has been given to past / historical data / reports. A review of the past data available in the various studies has been listed out and such available data has been made use of, after updating / augmenting the data wherever necessary. The data as collected has been made use of in analysis, design, formulation of improvement proposals and costing. The activities have been performed on several fronts fully complying with the requirements. The activities that are carried out are succinctly brought out hereunder.

The various engineering surveys / investigations of the road sections include:

- Reconnaissance Survey.
- Topographical Survey.
- Geotechnical Investigation.
- Road Inventory Survey.
- Pavement Condition Survey.
    - Visual Condition Survey.

## 2.2 Reconnaissance Survey

Reconnaissance Survey of the layout considered for improvements, has been carried out to identify the general condition of roads, drains, culverts and bridges for further surveys / investigations, to understand kind of establishments along the stretches of roads and to work out land acquisition scheme. Making use of the observations / data collected during reconnaissance survey, detailed schedule for surveys / investigations required for the project has been finalized.



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## 2.3 Topographical Survey

Topographical survey has been carried out using total stations. The existing features like extent of the slum area, utilities, infrastructures, trees and other details have been studied.

Levels for various Structures such as Drains, Roads and other important existing features have been noted

## 2.4 Geotechnical Investigations

Geotechnical tests have been carried in project site to study the sub soil characteristics.

## 2.5Road Inventory Survey

A detailed inventory and condition survey of road sections has been carried out by making use of well structured inventory data format. It was compiled in tabular form, developed using Excel computer software. Various data collected during the road inventory broadly include.

- Type of terrain.
- Land use.
- Carriageway width.
- Type of surfacing.
- Shoulder, Median, Drain (tertiary / shoulder), Footpath – type and width.
- Road Geometry.
- Road Furniture.
- Illumination.
- Salient Buildings & Structures.
- Road Intersection(s) and their details.
- Land width (RoW).
- Culverts, bridges and other structures (type, size, span arrangement, and location).
- General drainage conditions.

## 2.6 Pavement Condition Survey

The Pavement Condition Survey has been carried out in accordance with IRC Guidelines. All surveys and investigations have been carried out with the following objectives



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# CHAPTER -3
# DESIGN STANDARDS

| Sl. No. | Code | Description |
|---|---|---|
| 1. | *IS: 875 (Part 1) – 1987* | Code of Practice for Design Loads (other than Earthquake) for Buildings and Structures – Unit Weights of Building Materials and Stored Materials. |
| 2. | IS: 875 (Part 2) – 1987 | Code of Practice for Design Loads (other than Earthquake) for Buildings and Structures – Imposed Loads. |
| 3. | IS: 875 (Part 5) – 1987 | Code of Practice for Design Loads (other than Earthquake) for Buildings and Structures – Special Loads and Load Combinations. |
| 4. | IS: 456 – 2000 | Code of Practice for Plain and Reinforced Concrete |
| 5. | IS: 1786 – 1985 | Specification for High Strength Deformed Steel bars and Wires for Concrete Reinforcement. |
| 6. | IS: 3370 (Part 1) – 1965 | Code of Practice for Concrete Structures for the Storage of Liquids – General Requirements. |
| 7. | IS: 3370 (Part 2) – 1965 | Code of Practice for Concrete Structures for the Storage of Liquids – Reinforced Concrete Structures. |
| 8. | IS: 3370 (Part 4) – 1967 | Code of Practice for Concrete Structures for the Storage of Liquids – Design Tables. |
| 9. | IS: 1893 – 2002 (Part 1) | Criteria for Earthquake Resistance Design of Structures. |
| 10. | IS: 4326 – 1993 | Earthquake Resistance Design and Construction of Building – Code of Practice. |
| 11. | IS: 875 (Part 3) – 1987 | Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures – Wind Load. |
| 12. | IS: 875 (Part 4) – 1987 | Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures – Wind Load. |
| 13. | IS: 875 (Part 5) – 1987 | Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures – Wind Load. |



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**Table 3.3**

**Overlay Design Standards**

| Sl. No. | Design Parameters | Reference Code / Design Values |
|---|---|---|
| 1. | Overlay Design | IRC: 81 – 1997 "Guidelines for Strengthening of Flexible Road Pavements Using Benkelman Beam Deflection Technique" |
| | • Design Life | 10 years |
| | • Correction Factors | Temperature Correction Factor.<br>Correction for Seasonal Variation (inclusive of correction for moisture content, soil type and rainfall) |
| | • Minimum Thickness | From structural considerations recommended minimum bituminous overlay thickness is 40 mm AC (minimum) or 50mm BM (as required) + 40mm BC |
| 2. | Wearing Course Material (Options) | Bituminous Concrete with Crumb Rubber Modified Bitumen / Plastic Waste. |

## 3.4 Design Standards Related to Road Drainage

Drainage of water from pavement surface is of paramount importance as far as preserving the road assets created by investing huge funds in addition to maintaining the structural soundness and functional efficiency of the road. Design standards related to road drainage are essentially based on the guidelines given in IRC: SP: 42 – 1994 "Guidelines on Road Drainage" and in IRC: SP: 50 – 1999 "Guidelines on Urban Drainage". The suggested design values / standards are detailed in **Table 3.4**.

**Table 3.4**

**Design Standards Related to Road Drainage**

| Sl. No. | Design Parameters | Design Values |
|---|---|---|
| 1. | • Camber | 1.7 – 2.5 % (bi – directional) for carriageway (camber of 3% is adopted). |
| | • Longitudinal Gradient | Minimum 0.3 – 0.5% for satisfactory drainage |
| | • For Existing Drains | Desilting and Rectification of Damaged Portion |



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150mm Granular sub base Layer shall be laid by compacting existing ground surface and overlaid with, 100mm Dry lean concrete and 100mm Pavement Quality Concrete Layer.

### 4.4 Proposed Improvements to Road Section

The proposals for the improvement of the geometric elements of the existing project road sections generally include:

**a. Geometric Improvements**

- Maintaining Uniform Carriageway.
- Improvements to cross sectional elements.

**b. Providing Overlay for Existing Road & Damaged portion Reconstruction**

- GSB 150mm
- WMM 250 mm
- DBM 50mm.
- BC 40mm.

## ➢ BUILDING COMPONENTS

## ➢ Foundations

Foundations provide the structure's stability from the ground:

- To distribute the weight of the structure over a large area in order to avoid overloading the underlying soil (possibly causing unequal settlement).
- To anchor the structure against natural forces including earthquakes, floods, droughts, frost heaves, tornadoes and wind.
- To provide a level surface for construction.
- To anchor the structure deeply into the ground, increasing its stability and preventing overloading.
- To prevent lateral movements of the supported structure (in some cases)



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# Drain Components

## For RCC Drain

- **Disposal of Excavated material**

All the excavated materials shall be the property of the employer. The material obtained from the excavation of roadway, shoulders, verges, drains, cross-drainage works etc., shall be used for filling up of (i) roadway embankment, (ii) the existing pits in the right-of-way and (iii) for landscaping of the road as directed by the Engineer, including leveling and spreading with all lifts and lead up to 5Km and no extra payment shall be made for the same.

- **Providing 1:3:6 Concrete**

The Drain Bed will be provided with the concrete so the drain bed will be strong and resist the load coming from the top of the drain and the drain bed will be 150mm thick.

- **Providing M20 Concrete**

The Culvert raft and the drain side wall will be made by M20 reinforced cement and it be compact and the concrete let be cure. The bottom Raft 150mm thick and the side wall also 150mm thick and side wall of height 0.60, Its Include Centering.

## ➢ Culverts

A culvert is a structure that channels water past an obstacle or to channel a subterranean waterway. Typically embedded so as to be surrounded by soil, a culvert may be made from a pipe, reinforced concrete or other material. Culverts are commonly used both as cross-drains to relieve drainage of ditches at the roadside, and to pass water under a road at natural drainage and stream crossings. When they are found beneath roads, they are frequently empty. A culvert may also be a bridge-like structure designed to allow vehicle or pedestrian traffic to cross over the waterway while allowing adequate passage for the water. Culverts come in many sizes and shapes including round, elliptical, flat-bottomed, open-bottomed, pear-shaped, and box-like constructions. The culvert type and shape selection is based on a



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# CHAPTER - 5
# COST ESTIMATES

## 5.1 Detailed Cost Estimate

Detailed cost Estimate has been worked out based on detailed engineering design.

## 5.2 General

Cost Estimate is an important part of the Report as it provides vital input to financial evaluation of the project. The cost estimates have been prepared for Strengthening of the existing road including strengthening.

## 5.3 Basic rates

As part of Report, Rate Analysis of each of the item has been prepared by adopting PW, P & IWTD SR 2021-22 & PWD SR 2018-19 & Data Rate & Issue Rate , Bangalore Circle. The rates as given in PW, P & IWTD SR are to be enhanced by 10% for additional weightages for the works to be executed under extra ordinary conditions inside Bangalore City limits. Items not covered in NHSR / PW, P & IWTD SR have been based on market rates.

## 5.4 Detailed Project Report.

Provision of Lump sum cost of 1% of Construction Cost has been made towards Cost of DPR Preparation.

## 5.5 Project Management and Quality Control

Provision of Lump sum cost of 1% of Construction Cost has been made towards Cost of, Quality Control, PMC and Proof Checking.

## 5.6 Project Cost

The total project cost for the proposed work is 1000.00 Lakhs.

Detailed Cost Estimate is enclosed in Annexure A.5.1



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# CHAPTER 6
# CONCLUSION

The Project site for the work Developmental works, in Bangalore North which is thickly populated Residential/Commercial which would primarily improve the urban area of these sections and standards of living as well. The project would also have a positive impact on the environment reducing pollution as well as improve the aesthetics and in turn would boost the overall image of the wards and the City as a whole.

The project is basically an obligatory work to Yelahanka for providing minimum basic amenities to the residents at squatter settlements in the City. Based on the above socio – economical and environmental impact it is worth financing the proposed project.

For the proposed Improvement Scheme, total Cost of the Project has been worked out as Rs. 1000.00 Lakhs.



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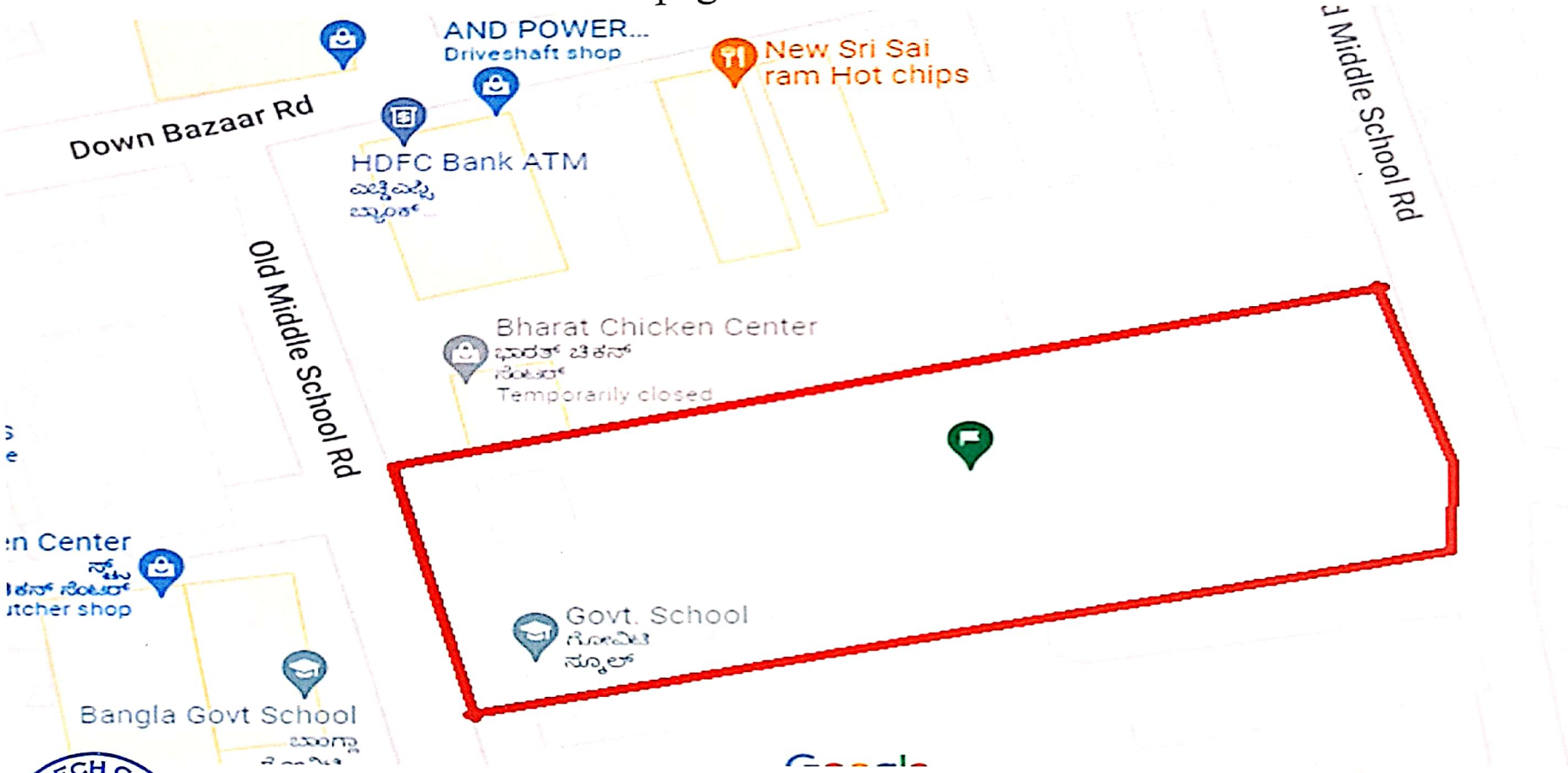
# Construction of Compound Wall and Other Development Works at Bangla School in Kempegowda Ward No.1

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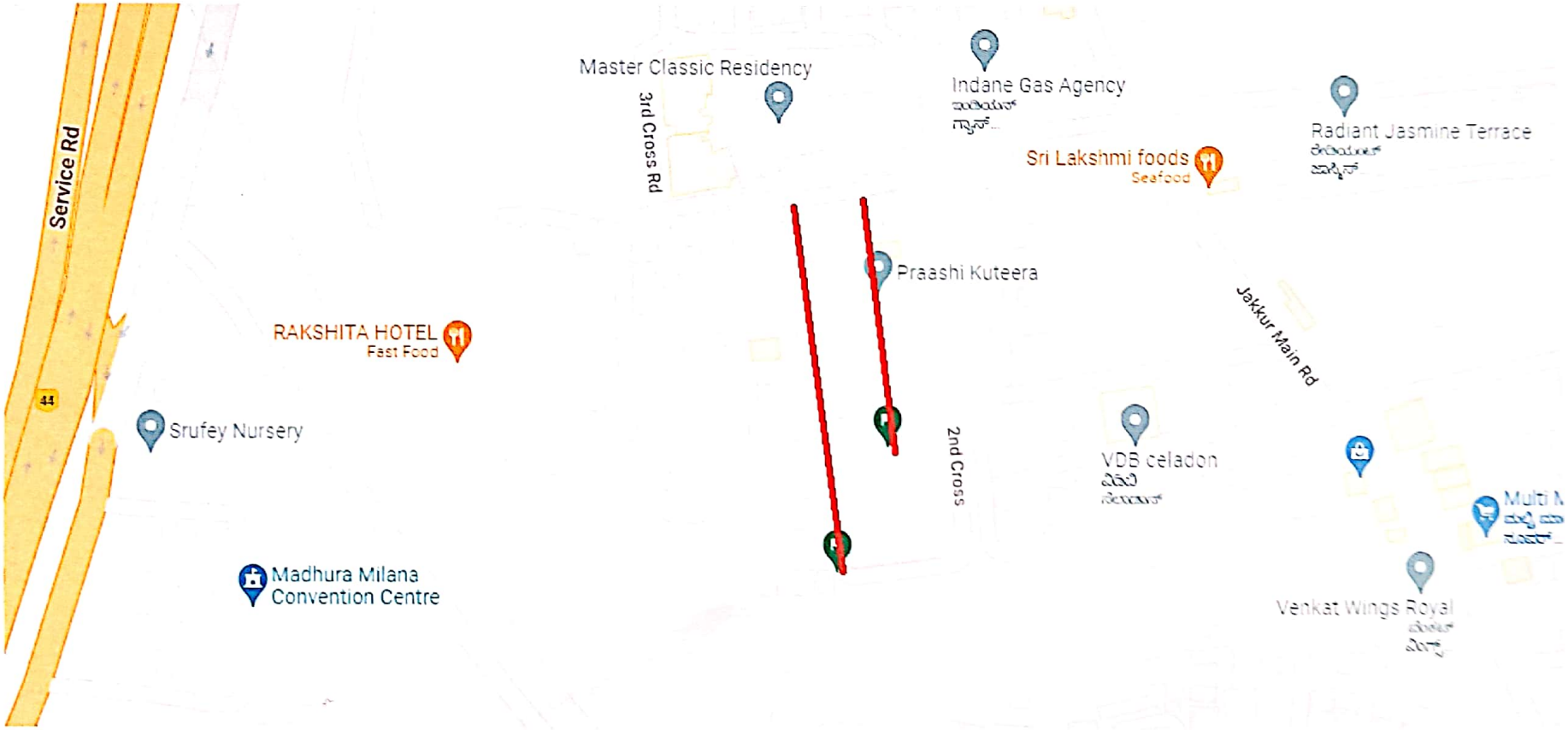
# Construction of Compound Wall and Other Development Works at Bangla School in Kempegowda Ward No.1

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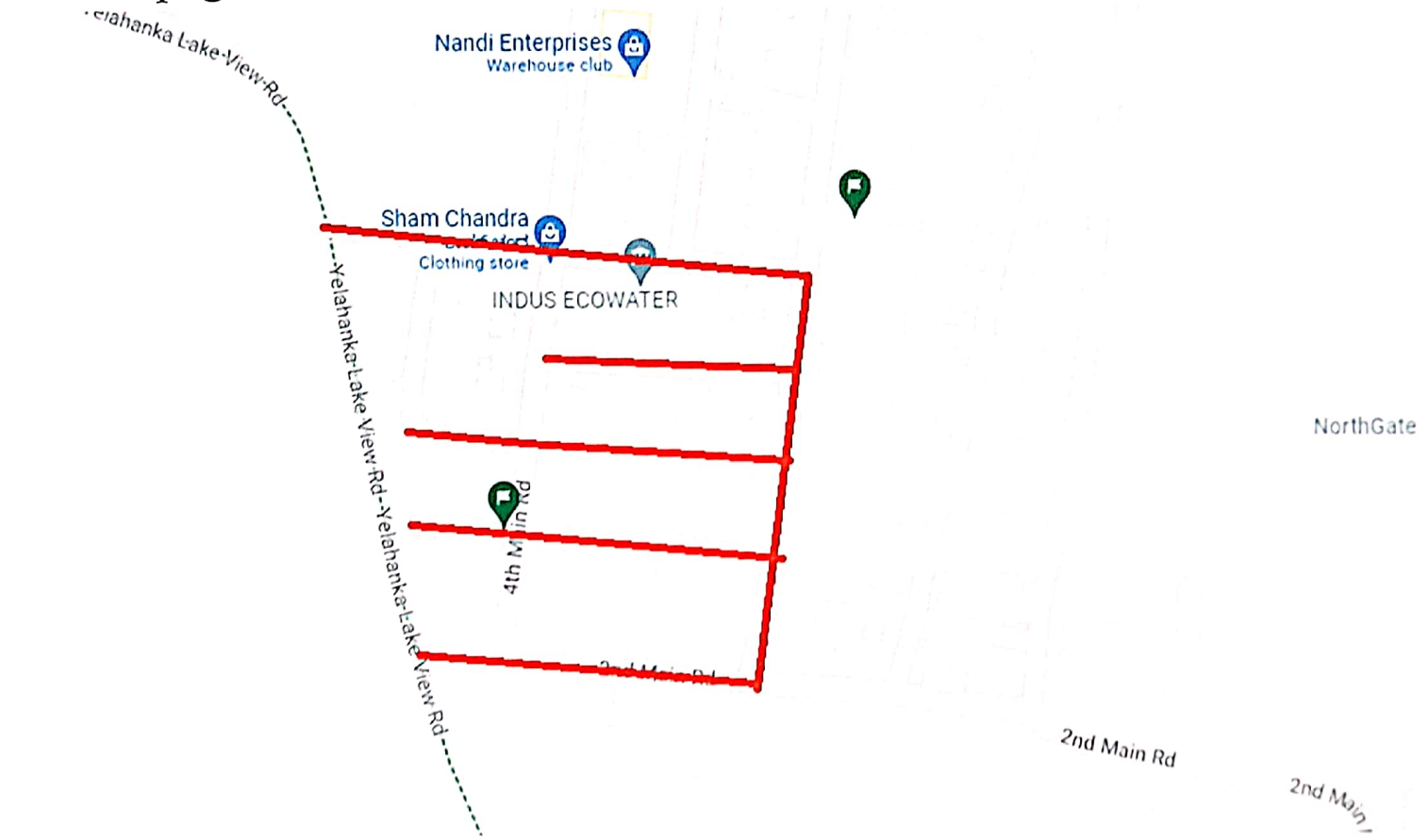
# Improvements of Balance Roads and Drains at Yelahanka Old Town and Surroundings area in Kempegowda Ward No.1 of Yelahanka Sub Division

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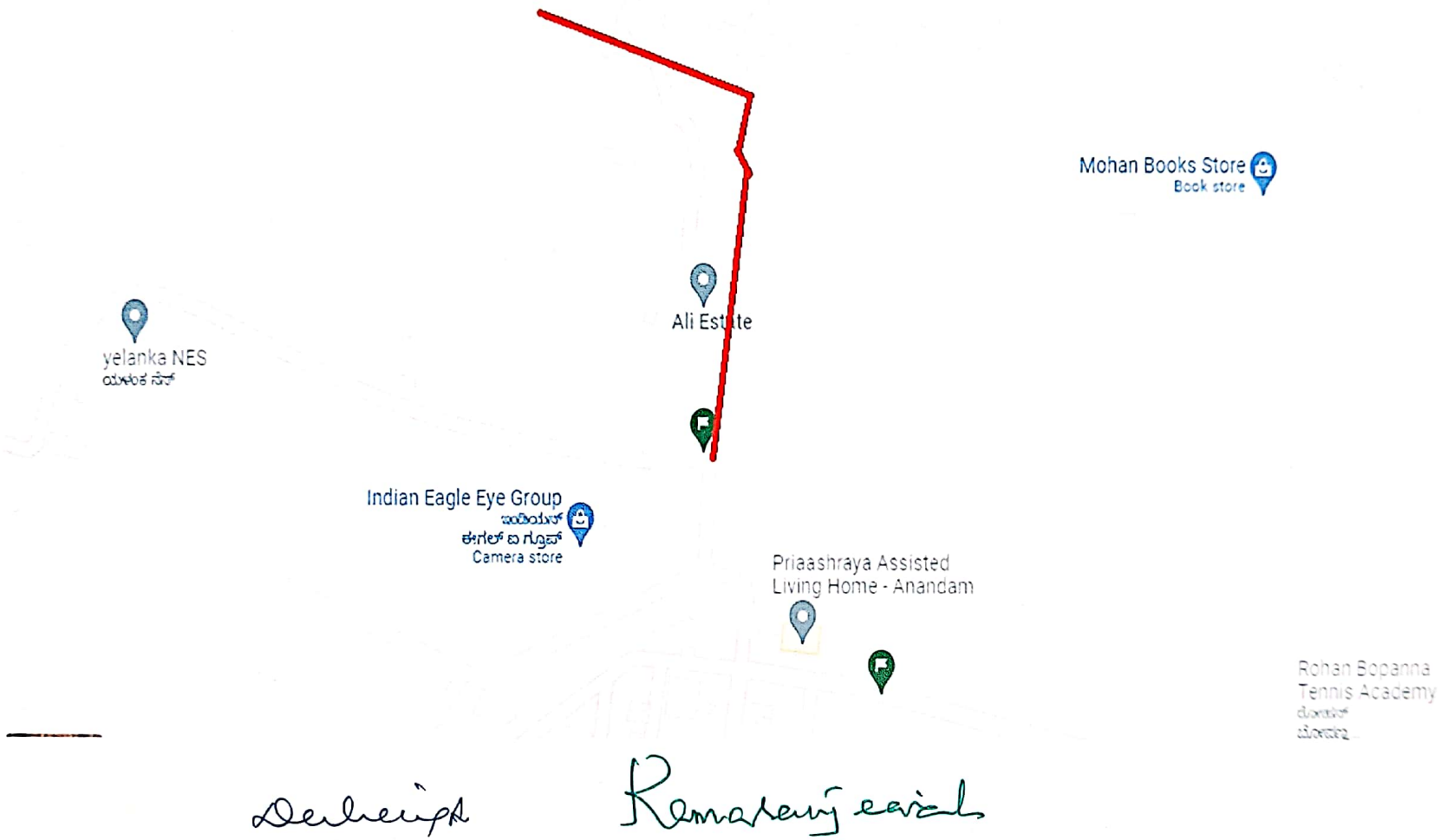


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# Improvements of Compound Wall and Other Development Works at Sapthagiri Layout in Kempegowda Ward No.1

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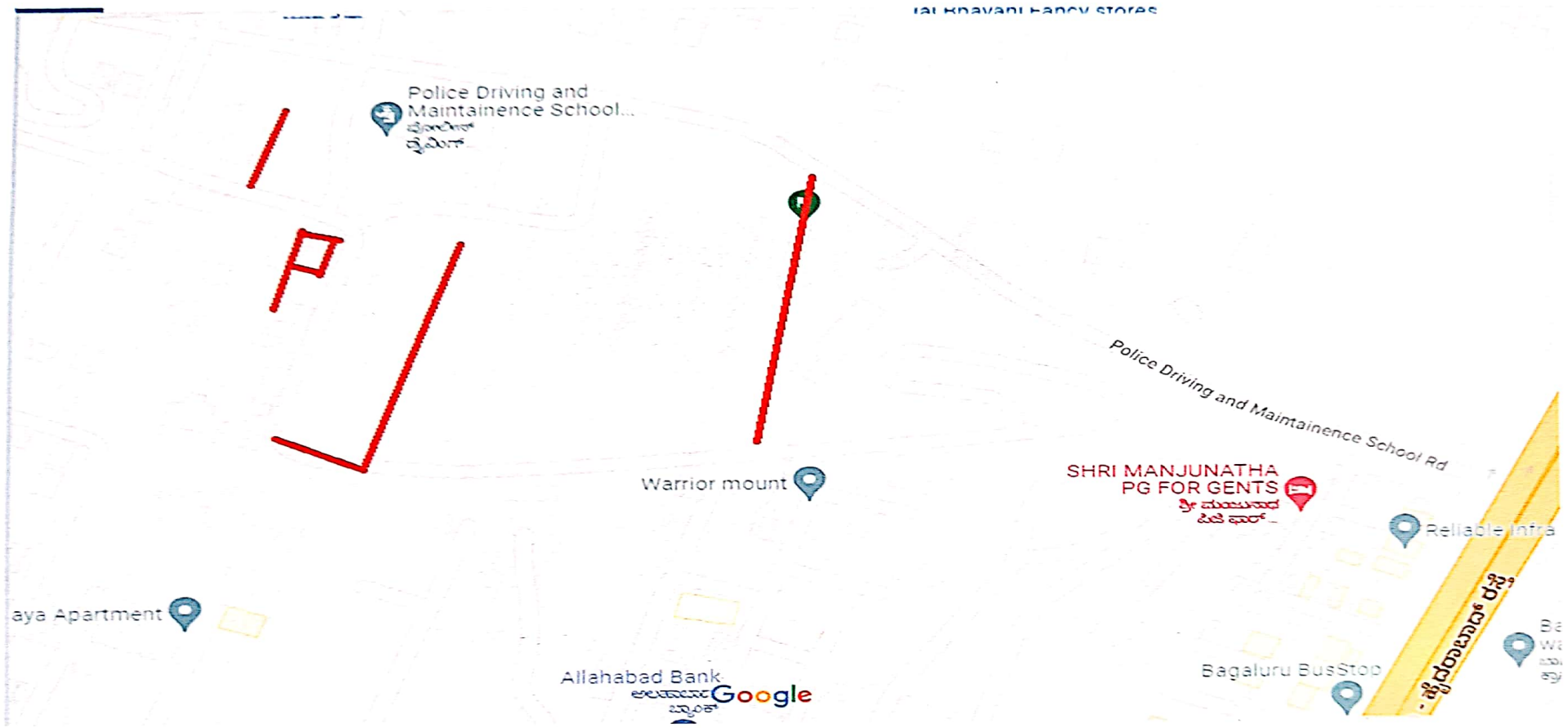
# Additional Development Works at PDMS,APTS & KSISF premises in Kempegowda Ward No.1

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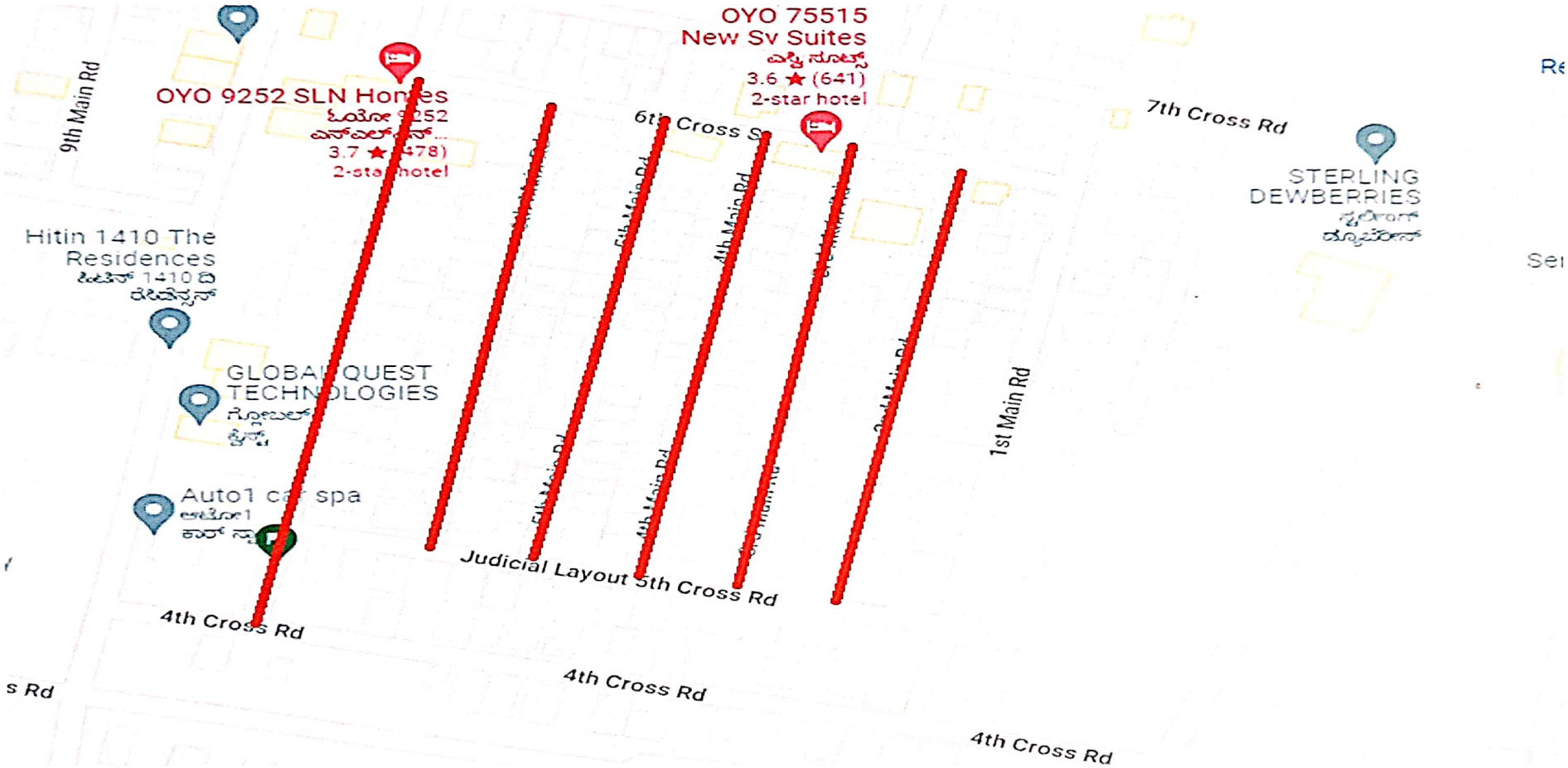
# Asphalting to Roads and Costructionof Drains from 2nd Main to 7th Main and Surrounding areas of Judicial Layout Ward No.4 of Yelahanka Satellite Town Sub Divison

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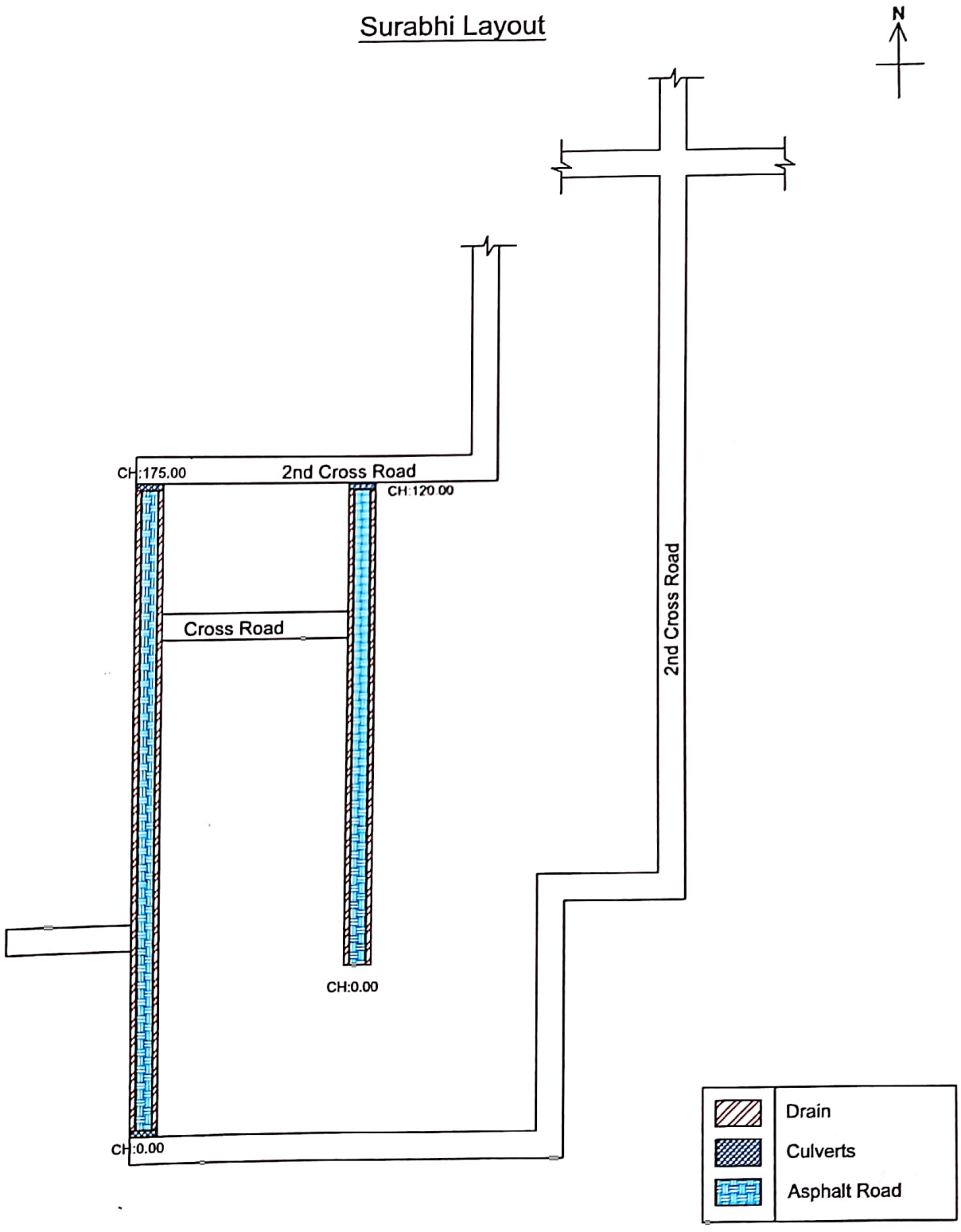
# Construction of Compound Wall and other development works at Bangala School in Kempegowda Ward No.01

## Surabhi Layout

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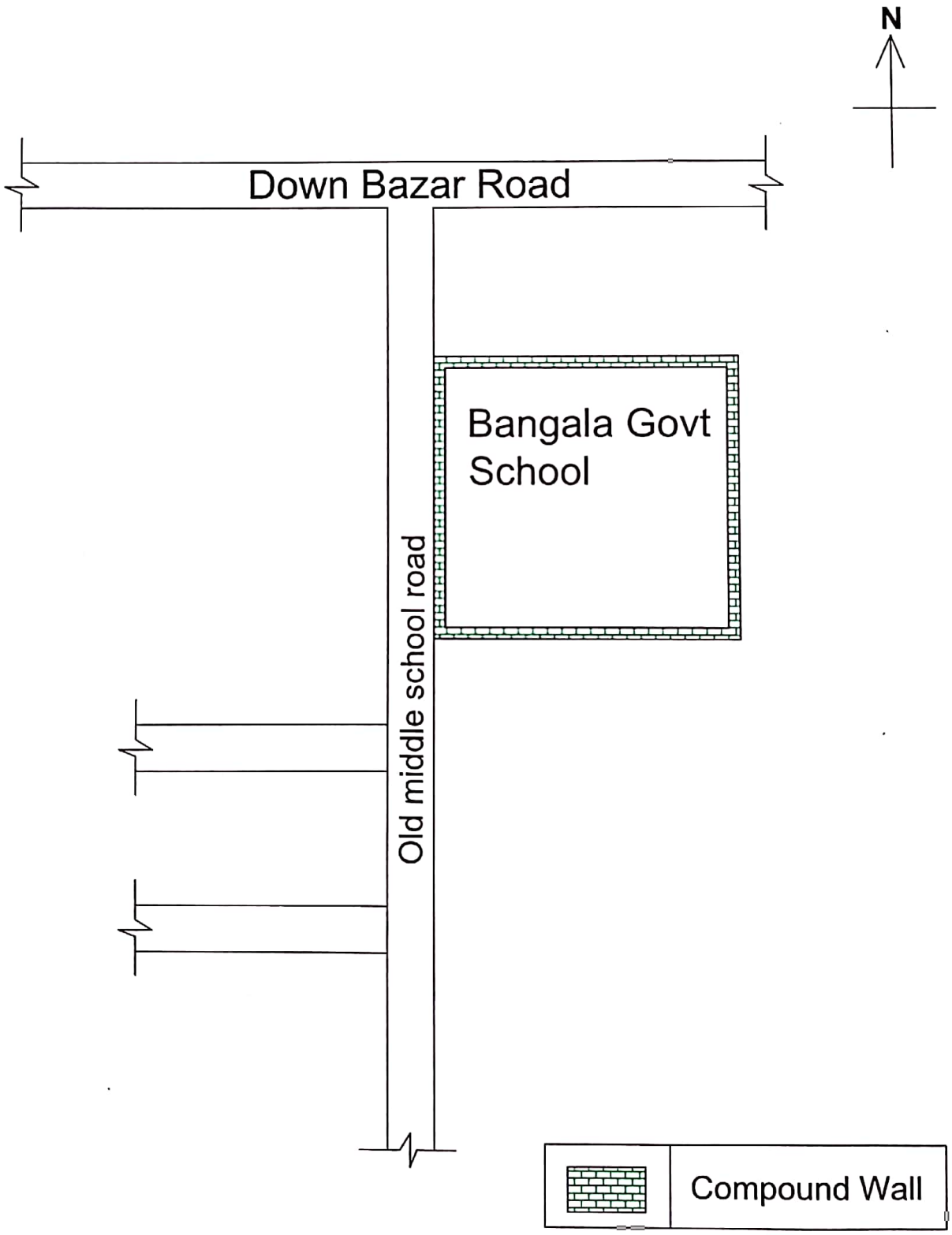
Construction of Compound Wall and other development works at Bangala School in Kempegowda Ward No.01

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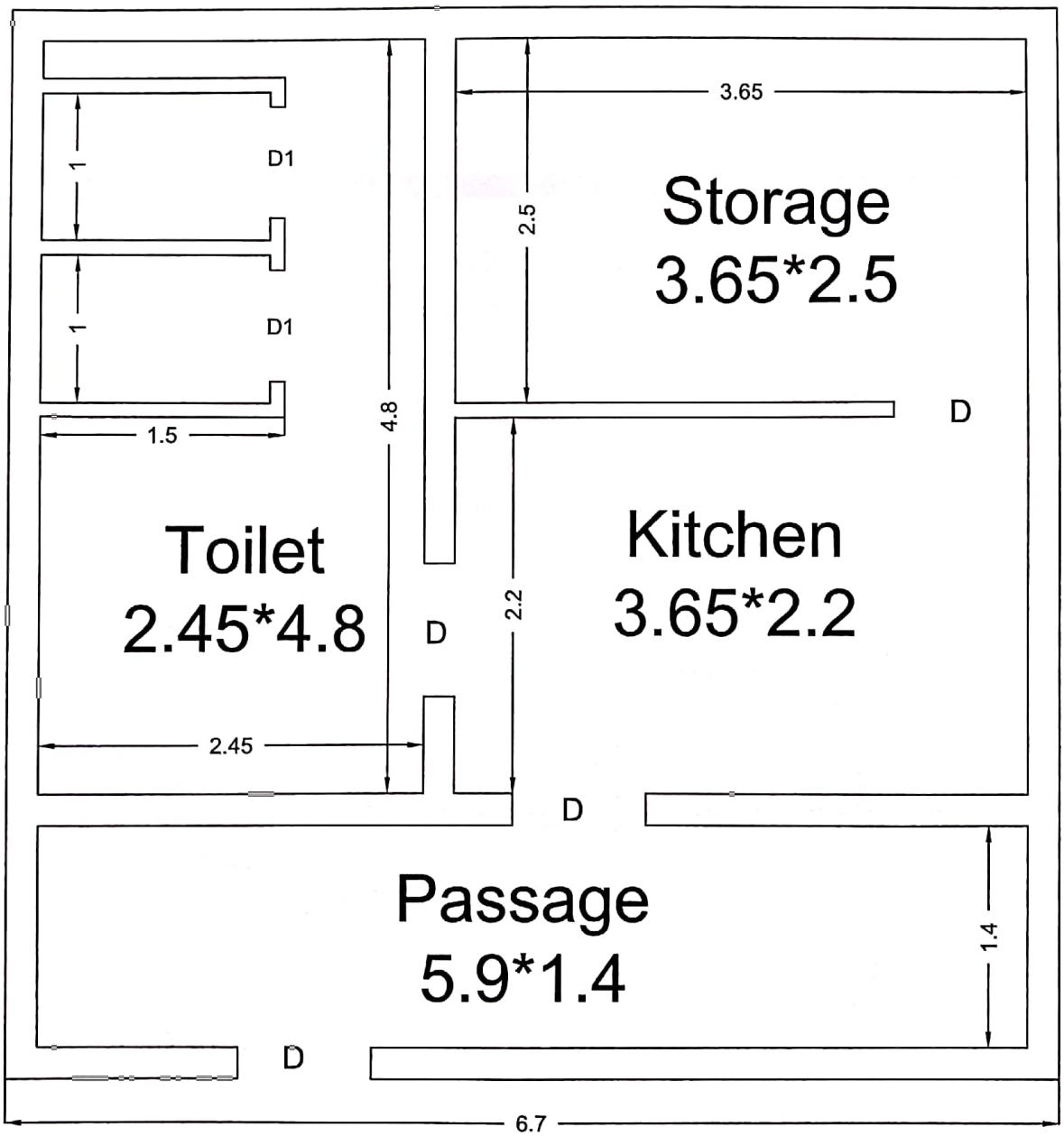
Construction of Compound Wall and other development works at Bangala School in Kempegowda Ward No.01




Anganavadi Building

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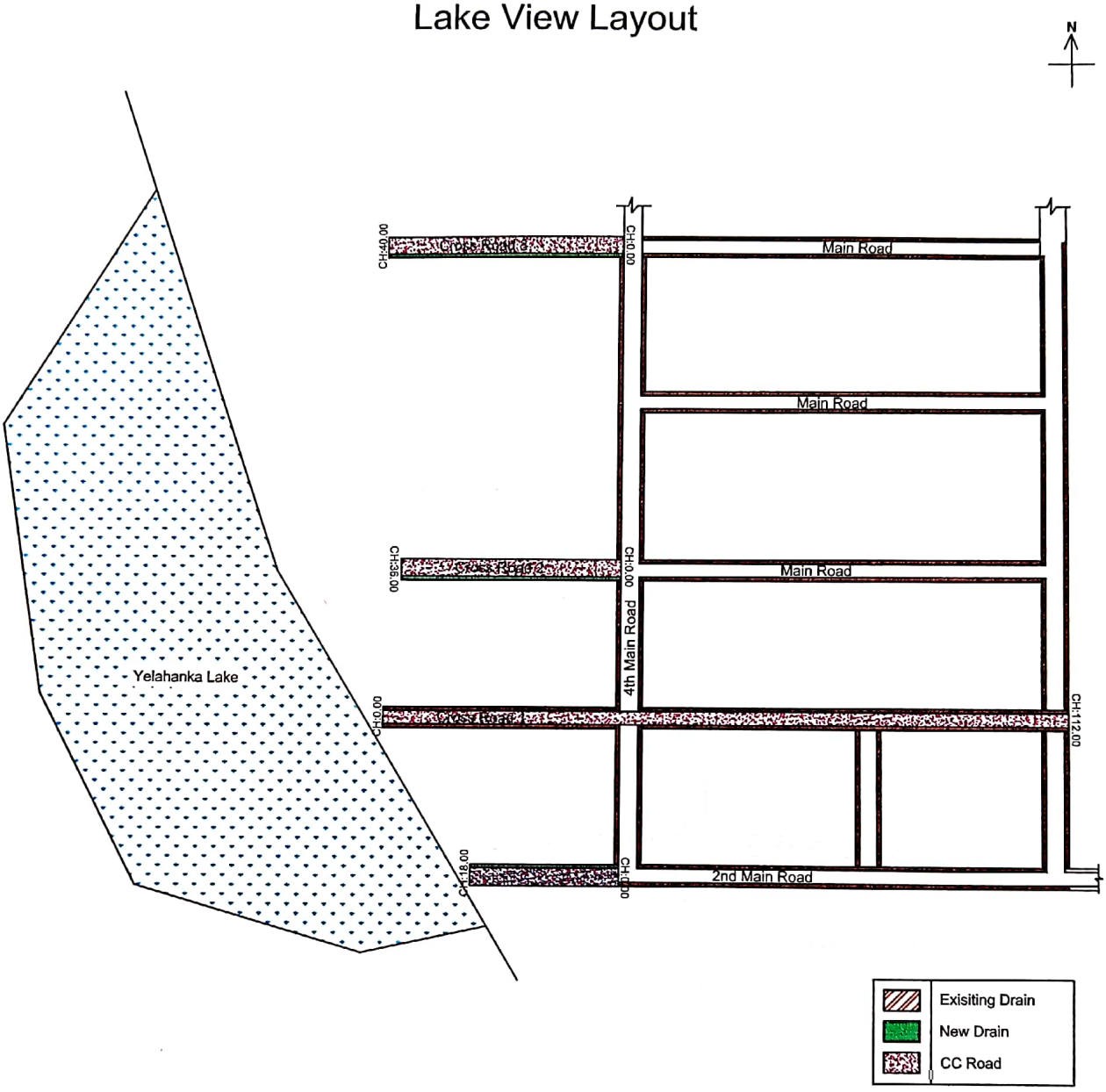
# Improvement of Balance Roads and Drains at Yelahanka Old Town and Surrounding Areas in Kempegowda Ward No.01 of Yelahanka Sub-Division

## Lake View Layout

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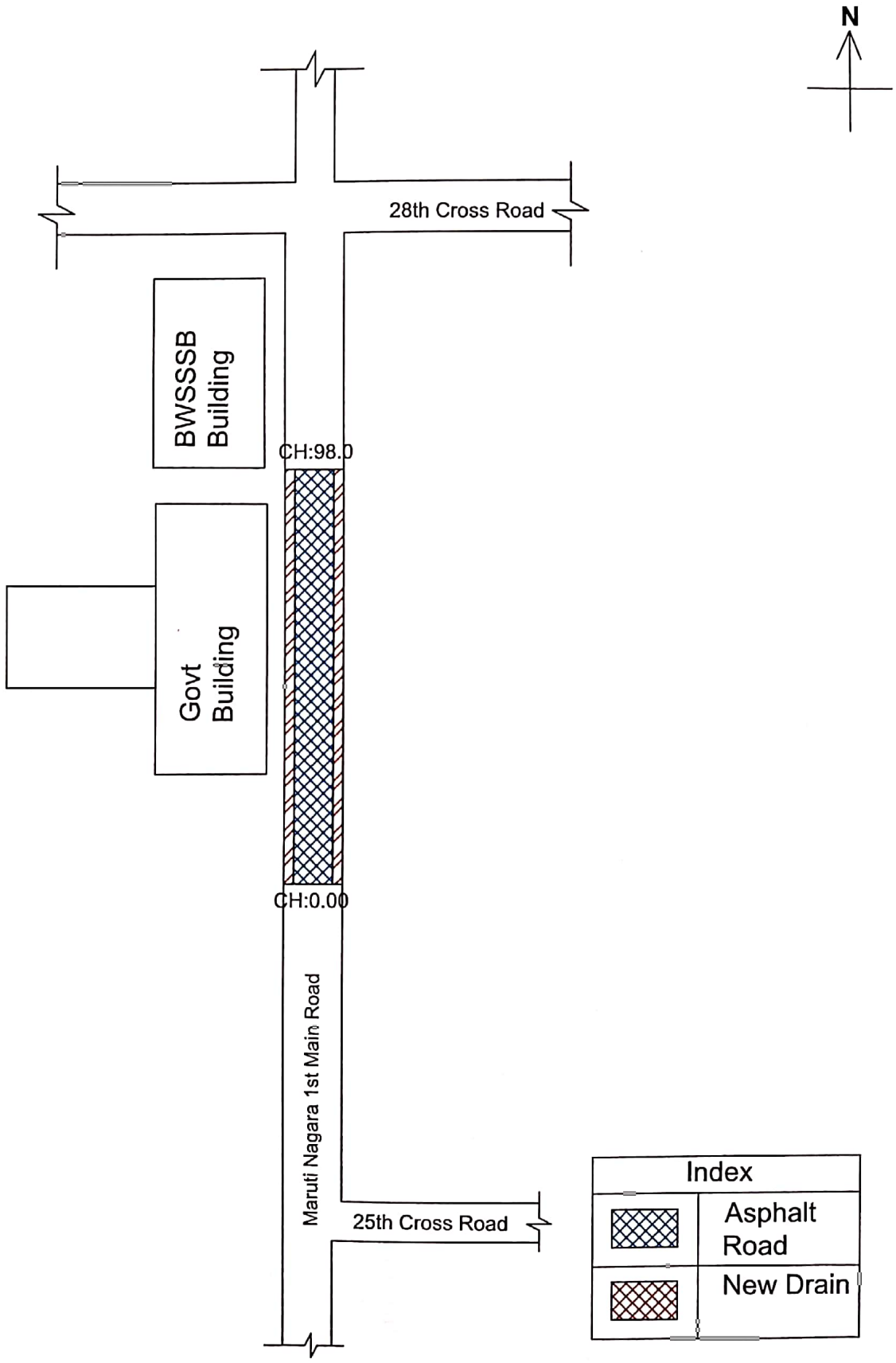
Resurfacing of Roads at Maruthinagar and Surrounding Areas in Kempegowda Ward No.01 of Yelahanka Sub-Division

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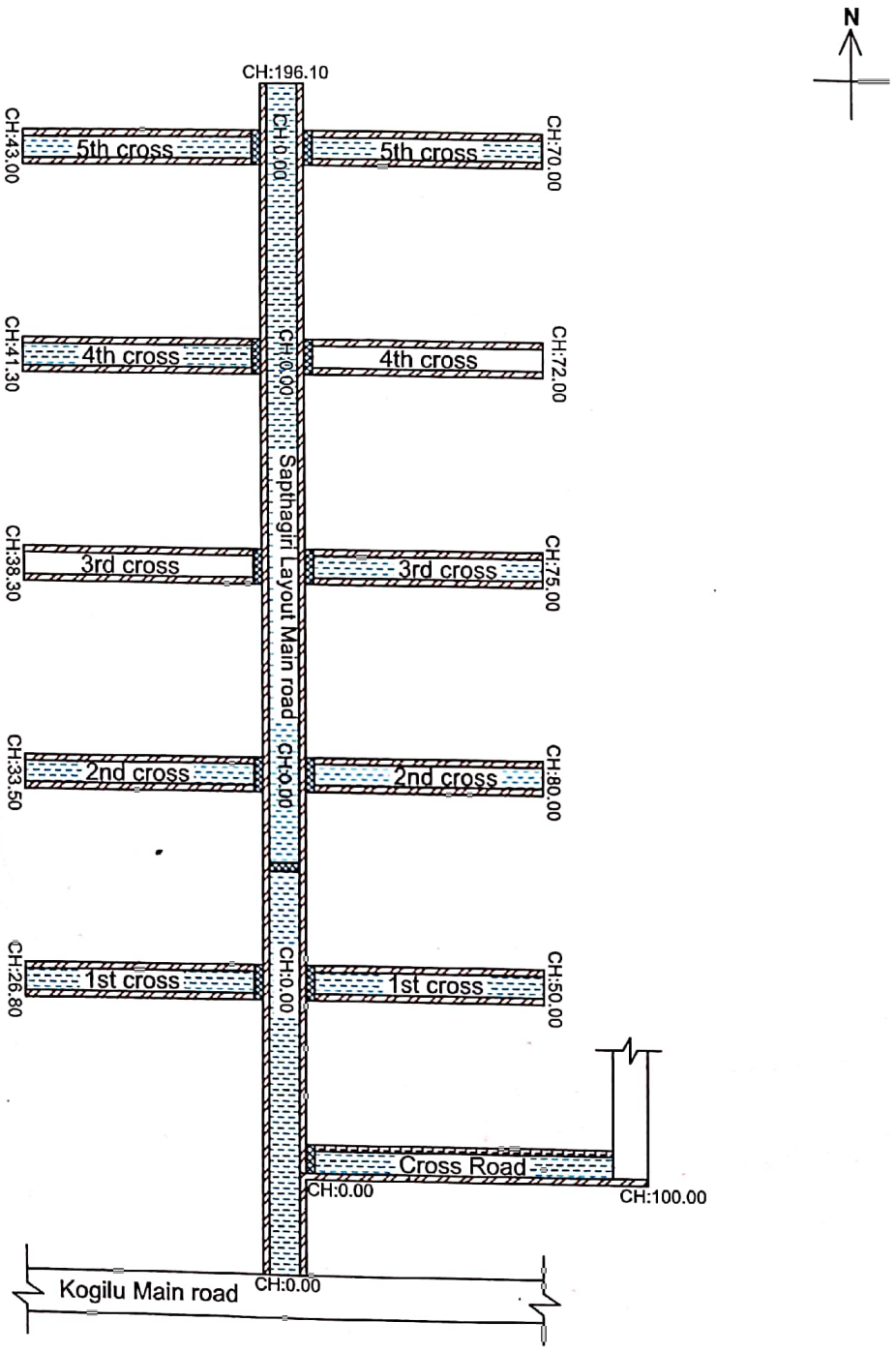
# Improvement of Roads and Drains at Sapthagiri Layout and Surrounding Areas in Kempegowda Ward No-01 of Yelahanka Sub-Division

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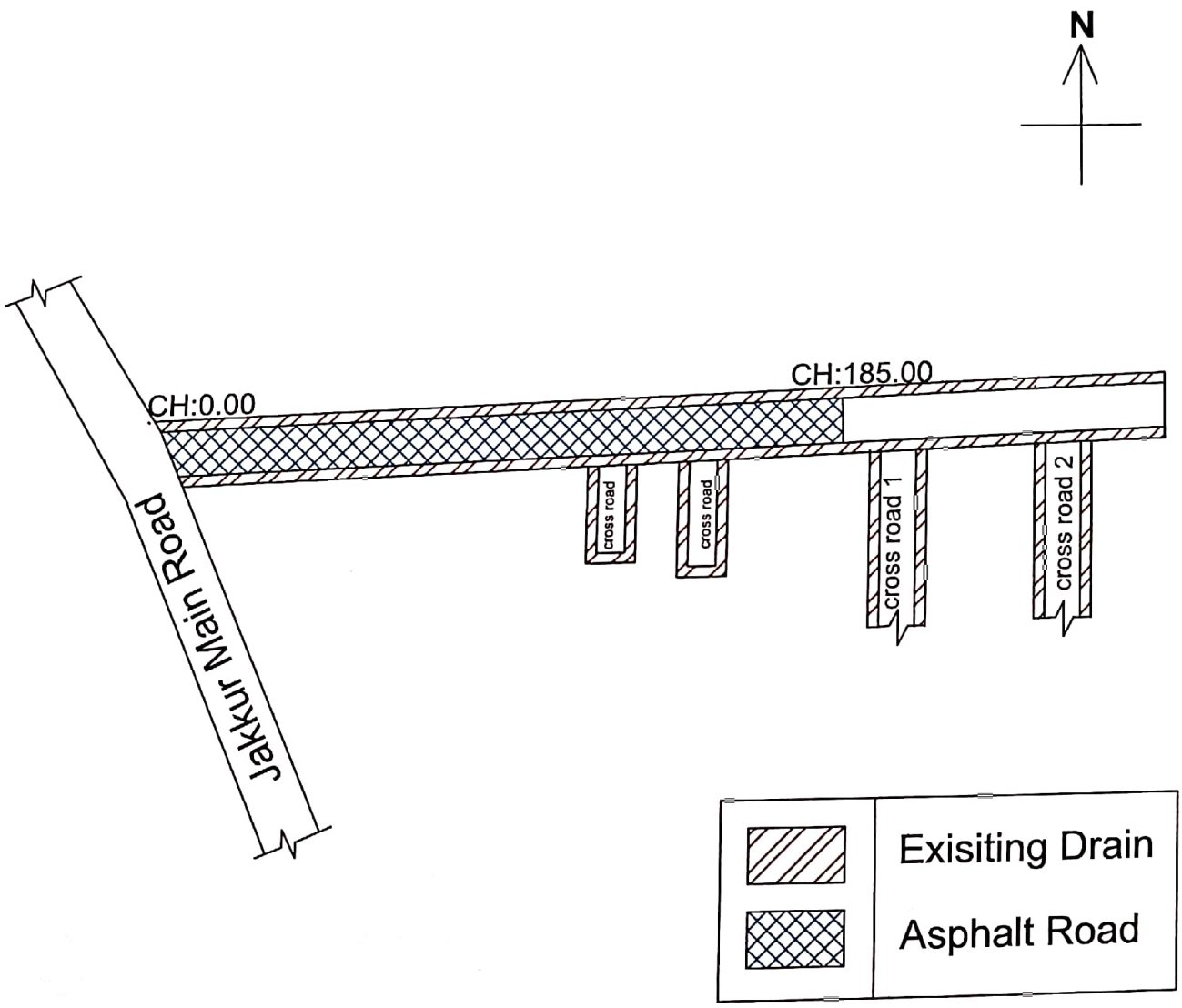
# Improvement of Balance Roads and Drains at Gandhinagar, KHB colony, Nehru nagar, Shivanahalli and Surrounding areas in Kempegowda Ward No.01 of Yelahanka Sub-Division.

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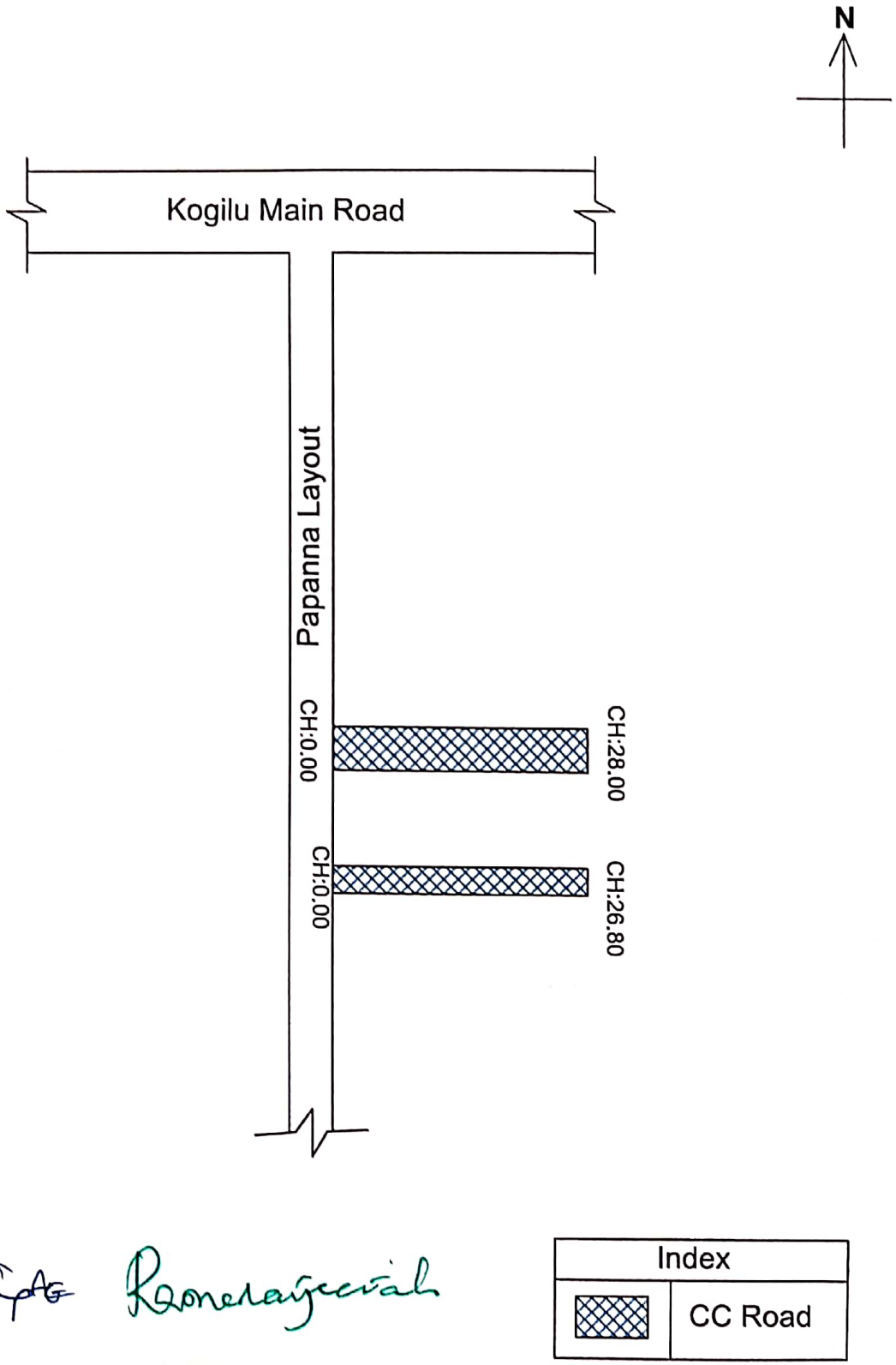
Improvement of Balance Roads and Drains at Gandhinagar, KHB colony, Nehru nagar, Shivanahalli and Surrounding areas in Kempegowda Ward No.01 of Yelahanka Sub-Division.

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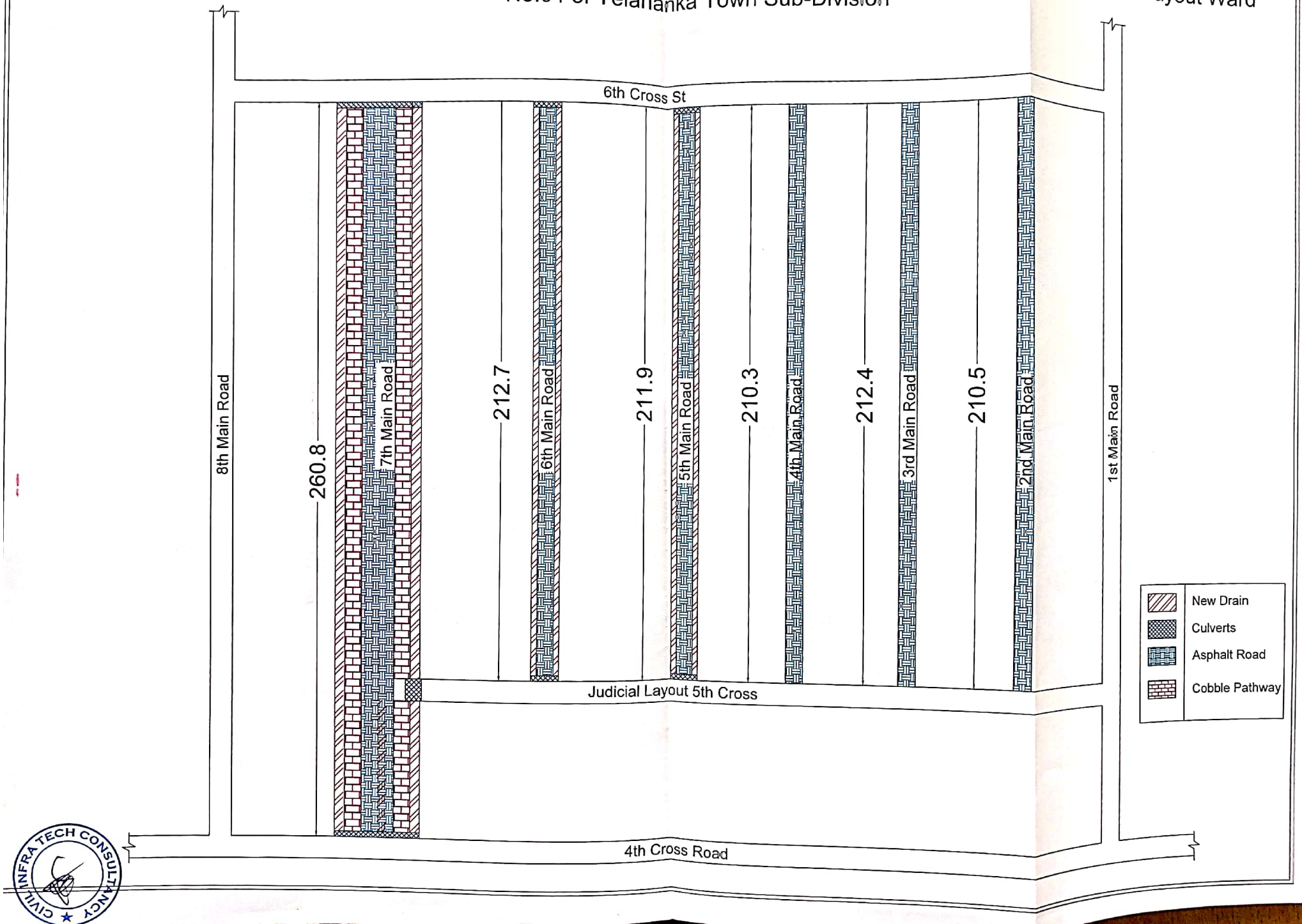
# Asphalting to Road Sand Construction of Drains from 2nd Main to 7th Main and surrounding areas of Judicial Layout Ward No.04 of Yelahanka Town Sub-Division

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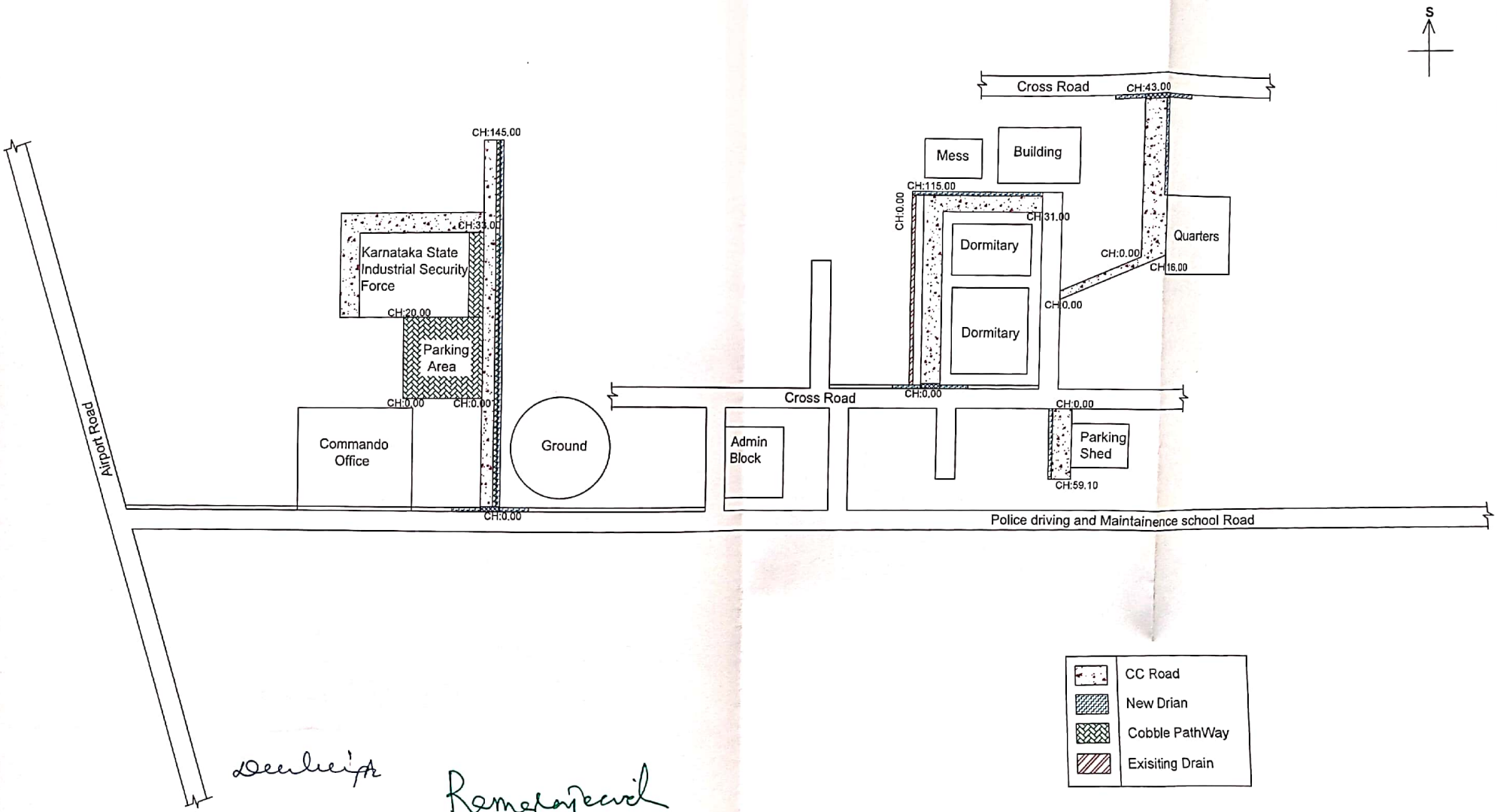
Scanned with CamScanner

# Additional Development Works at PDMS, APTS & KSISF premises in Kempegowda Ward No.01 of Yelahanka Sub-Division

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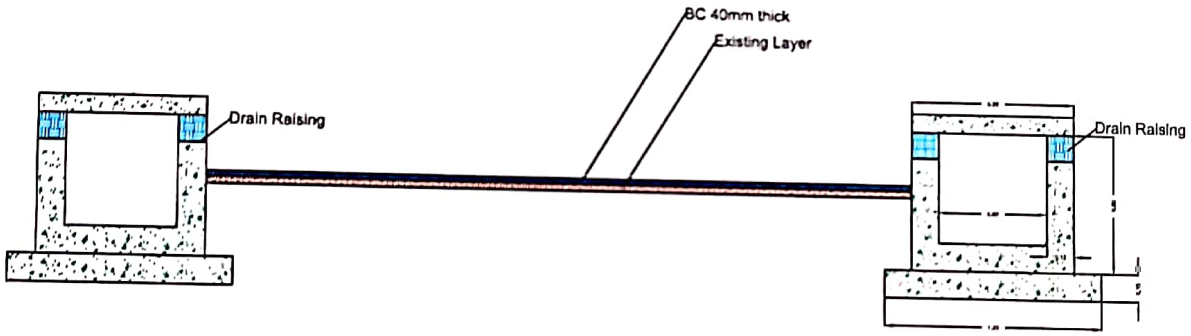
BRUHAT BANGALORE MAHANAGARA PALIKE

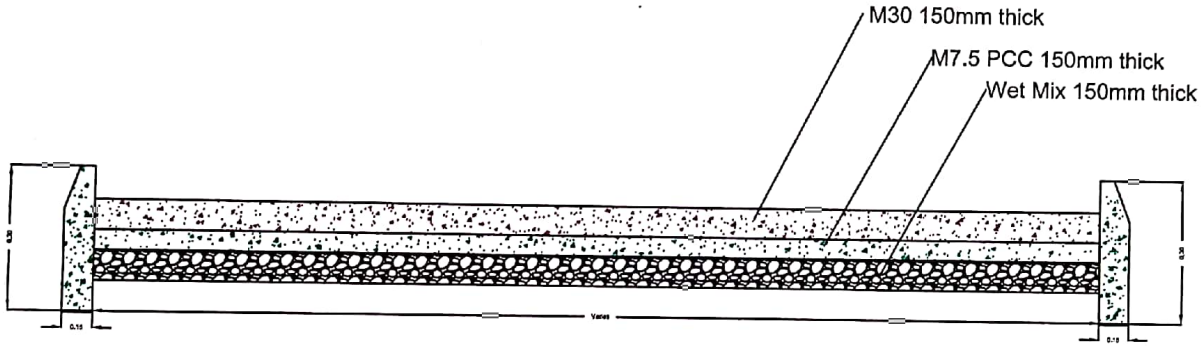



CROSS SECTION OF ASPHALT ROAD

All Dimensions in Meters

Scanned with CamScanner

BRUHAT BANGALORE MAHANAGARA PALIKE




# CROSS SECTION OF CEMENT CONCRETE ROAD

All Dimensions in Meters

Scanned with CamScanner

**Construction of Compund Wall and Other Development Works at Bangla School in KempeGowda Ward No.01 of Yelahanka Sub-Division**

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Ramanajeeval

Scanned with CamScanner

**Construction of Compund Wall and Other Development Works at Bangla School in KempeGowda Ward No.01 of Yelahanka Sub-Division**

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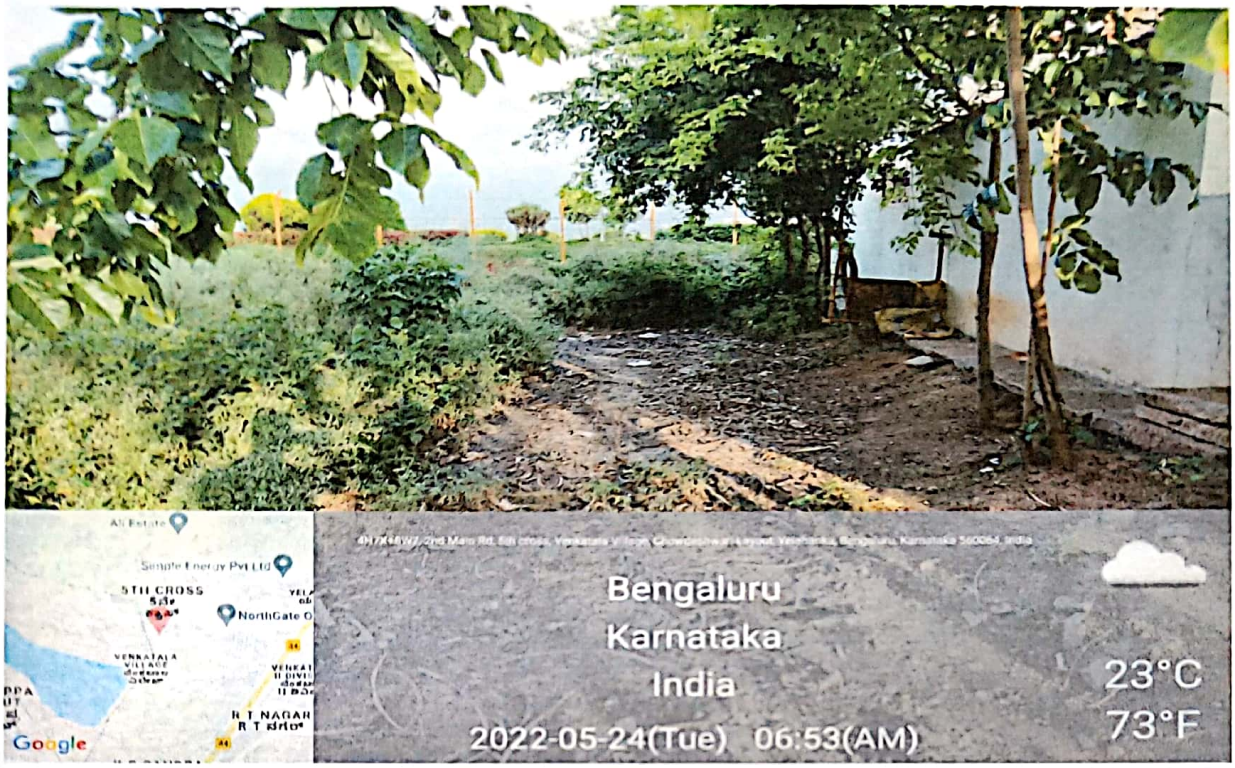
**Improvements to Balance Roads and Drains at Yelahanka Old Town and Surrounding Areas in KempeGowda Ward No.01 Of Yelahanka Sub-Division**



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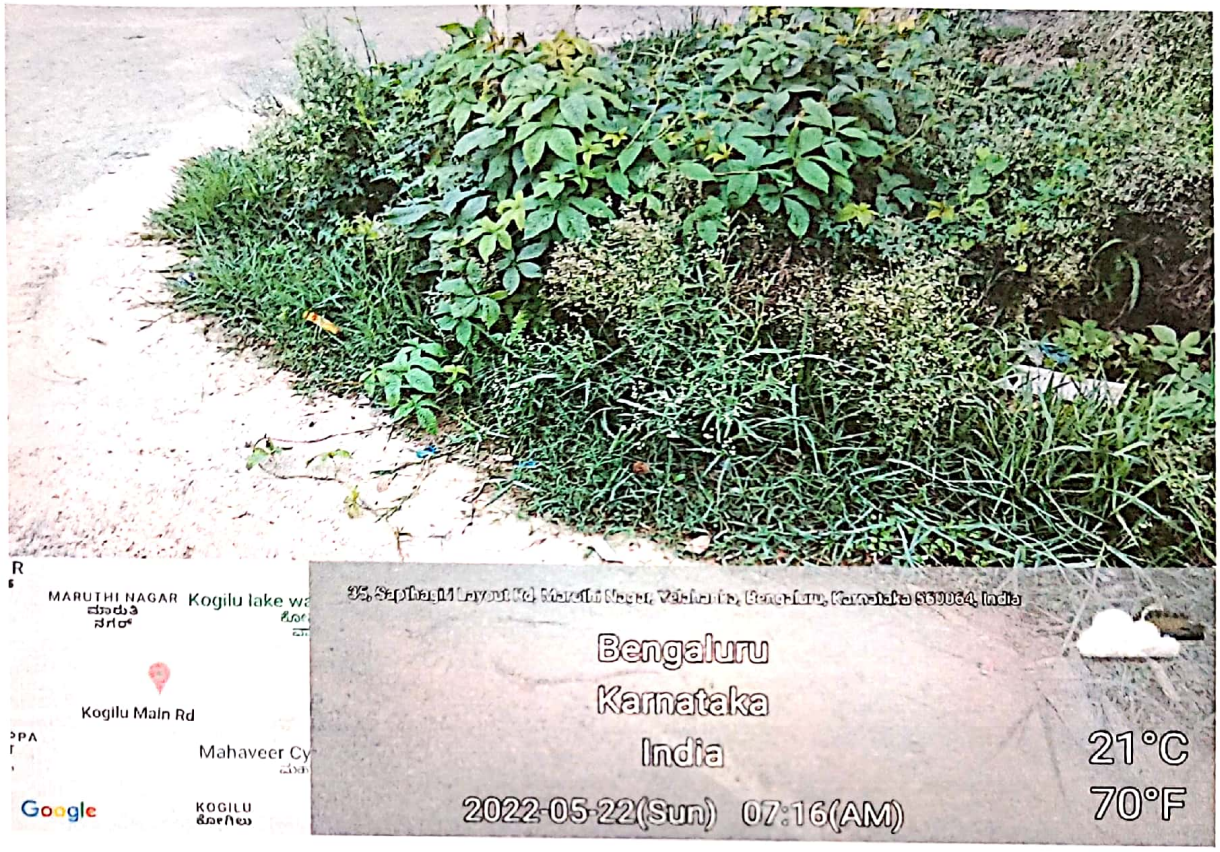
**Improvements to Balance Roads and Drains at Sapthagiri Layout and Surrounding Areas in KempeGowda Ward No.01 Of Yelahanka Sub-Division**



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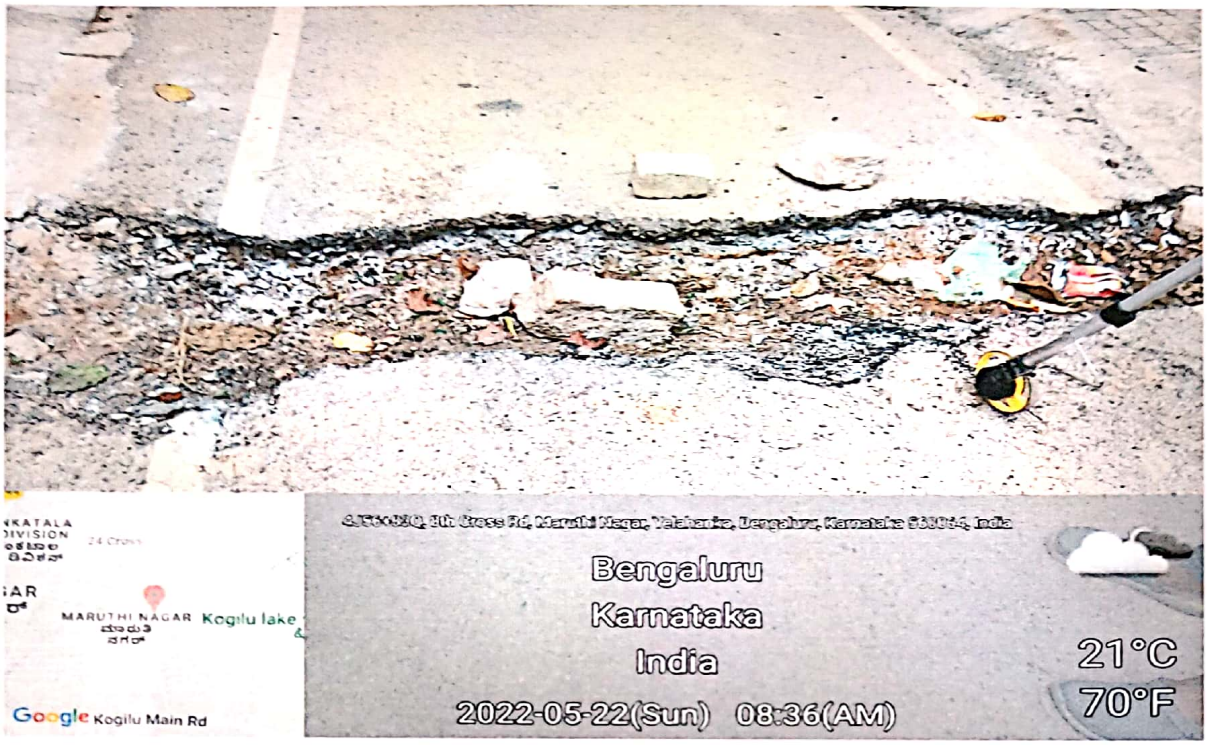
Scanned with CamScanner

**Resurfacing of Roads at Maruthinagara and Surrounding Areas in KempeGowda Ward No.01 Of Yelahanka Sub-Division**



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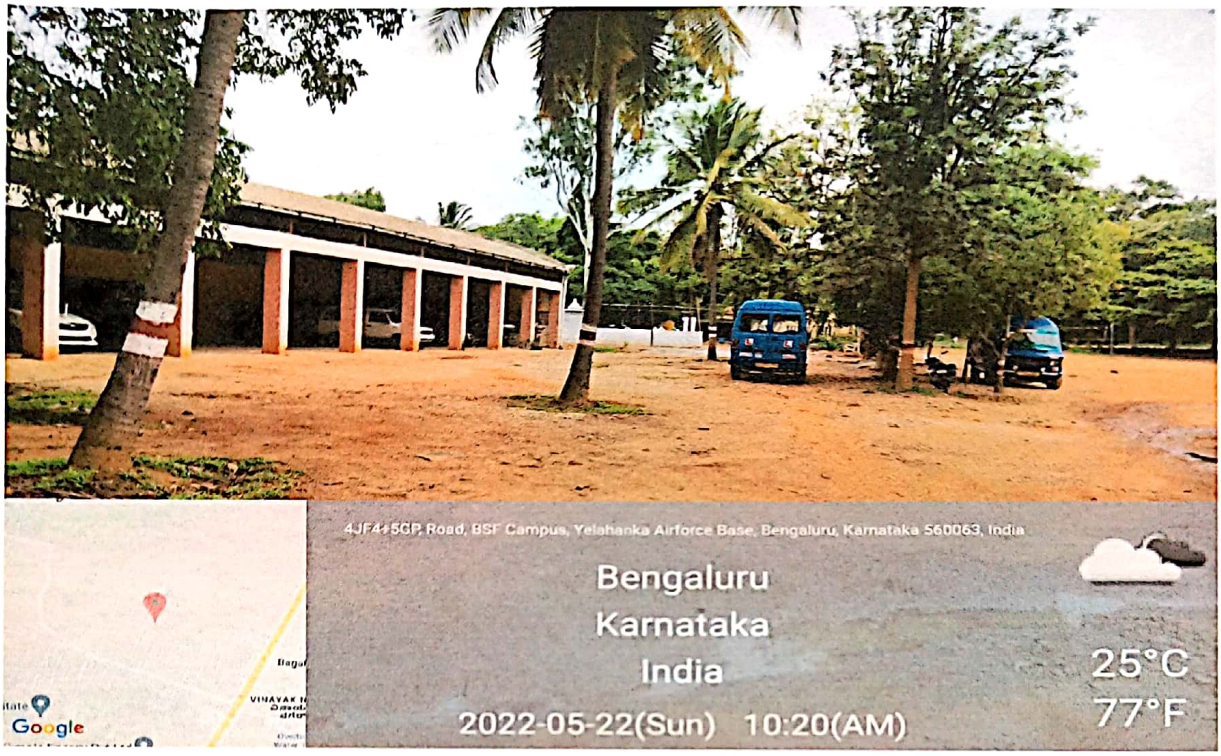
**Improvements to Balance Roads and Drains at Gandhinagara, KHB Colony, Nehru Nagara Shivanahalli, and Surrounding Areas in KempeGowda Ward No.01 Of Yelahanka Sub-Division**

Scanned with CamScanner

**Additional Developments Works at PDMS, APTS, & KSISF Premises in KempeGowda Ward No.01 Of Yelahanka Sub-Division**



Ramalingeeveri

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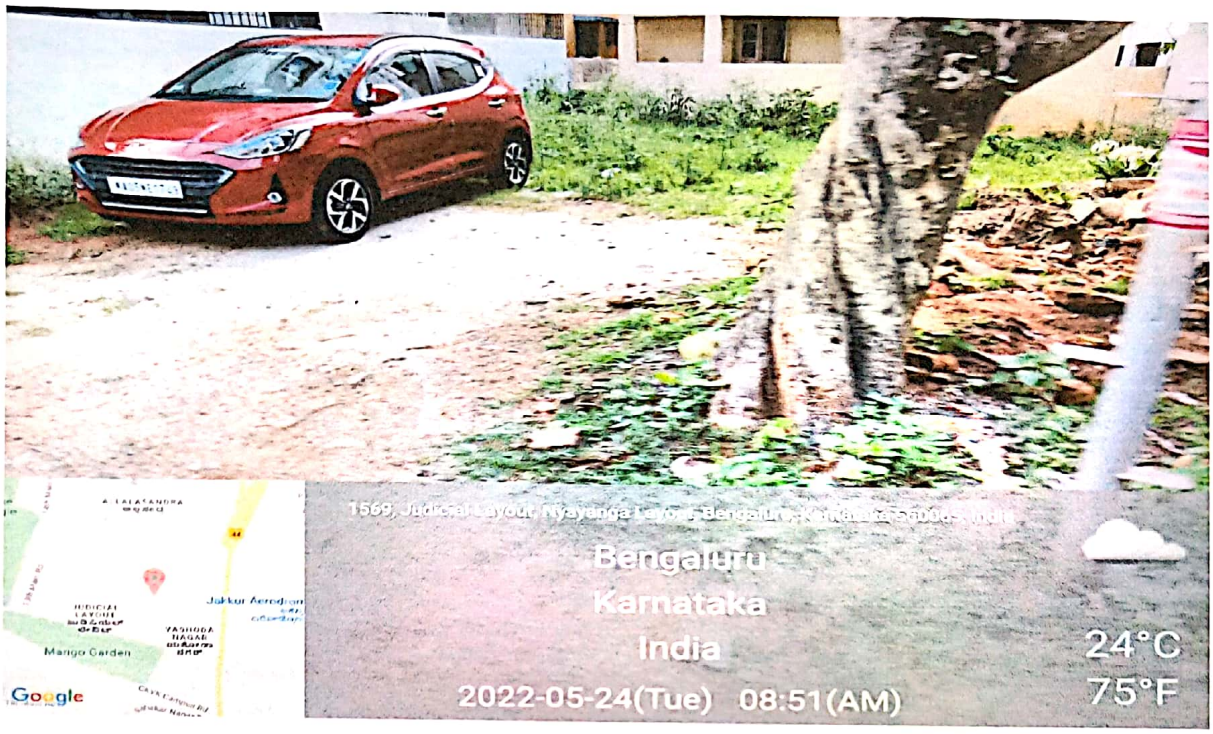
**Asphalting to Roads and Construction of Drains from 2nd Main to 7th Main and surrounding areas of Judicial Layout Ward No.04 of Yelahanka Satellite Town Sub-Division**



CIVIL INFRA TECH CONSULTANCY

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